

# An Outreach to the Public: Science of the Large Hadron Collider Exhibit

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The value of fundamental science, such as at the LHC, may be taken for granted by many engaged in this research. However, public awareness of the importance of both fundamental and applied science in their lives cannot be for granted. It has been alarming even in such countries as the United States, where science and technology have been strong historically, that new efforts are required to reinvigorate the interest of the nation's youth in science. With this mission in mind, thousands of people gather for the biennial US National Science and Engineering Festival in Washington, DC. The CMS group from the Johns Hopkins University presented an exhibit called "Science of the Large Hadron Collider" starting with the very first Festival in 2010 and continuing through the decade now. This exhibit has also been presented at the annual Physics Fair on JHU campus. The exhibit explains that hadron (proton) collisions happen in the upper atmosphere and their debris penetrates everything and everybody at every instant. A dark area behind curtains contains a diffusion cloud chamber for the observation of the cosmic rays. The visitors can watch the increasing count in electronics from cosmic rays passing through the scintillator counters. Computer simulation of the exhibit and animated event displays from CMS connected these to the giant apparatus at CERN. In recent years, the exhibit was enhanced with the Virtual Tour to the control rooms at CERN and the Virtual Reality visit to the giant particle physics detectors. Even little kids had fun playing with the magnet colliders, weightless magnets, and other fun toys. This overall experience gives us hope that there will be strong support for the kind of science we do at the LHC.

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